

**REMARKS**

In response to the above-identified Office Action and to put the application in better condition for allowance, Applicant has amended Figures 1-6 and Figure 8; the specification; claims 1, 17 and 19; and has canceled claims 2 and 18. Applicant submits that support for the amendments made herein can be found throughout the specification, claims and drawings of the original application and that no new matter has been added herein.

**35 USC 102**

Claims 1-7 and 17-19 are rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 4,409,764 to Wilnau.

Anticipation has always been held to require absolute identity and structure between the claimed invention and a structure disclosed in a single reference. In *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986) it was stated:

For prior art to anticipate under §102 it has to meet every element of the claimed invention.

Independent claims 1, 17 and 19 have been amended to include a further limitation that distinguishes the present invention from the cited reference. Particularly, these claims have been amended to include a limitation that the framing member as according to the invention includes a protective coating disposed on an interior surface of at least one of the shell members wherein the protective material used therein has a different composition from a filler material used to fill the interior volume of the framing member. The Wilnau patent does not disclose a framing member having such a limitation and thus can no longer serve as a basis for rejection under 35 USC 102 in view of relevant case law.

Claims 2-7 depend from amended claim 1 and dependent claim 18 depends from amended claim 17. As amended, claims 1, 17 and 19 are now believed to be in condition for allowance. All other claims of the present invention are dependent from these independent

claims and as such are now believed to represent patentable subject matter. As such, it is respectfully requested that reconsideration be given to the claims as amended and that the Wilnau '746 reference be withdrawn as a basis for rejection under 35 USC 102.

**35 USC 103**

Claims 8-16 are rejected under 35 USC 103 as being unpatentable over Wilnau in view of Hawley's and the dictionary.

In rejecting claims under 35 USC 103, a reason must be provided why one having ordinary skill in the pertinent art had been led to modify the prior art while combining references to arrive at the claimed invention. There must be something in the prior art that suggested the combination other than the hindsight gained from knowledge that the inventor chose to combine these particular things in this particular way. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051; 5 USPQ2d 1434, 1438 (Fed. Cir. 1988).

Applicant contends that Wilnau teaches a system and method for reinforced concrete construction wherein concrete is used as a filler material to fill the interior volumes of the formed members of the Wilnau invention such that the resulting concrete filled form members may be used as the structural framework of a building or other structure of reinforced concrete. Applicant does not dispute that concrete has inherent fire-resistant properties; however, Wilnau does not suggest applying a protective material to an interior surface of a formed member as according to Applicant's invention wherein the protective material is not used to fill the complete interior volume defined by the form members and wherein the remaining volume therein is filled with a filling material having a composition that is different from the protective material applied to the interior surface of the form member. Further, Applicant notices that the Hawley's and dictionary references contain definitions for mineral wool and fiberglass; however, Applicant submits that neither of these

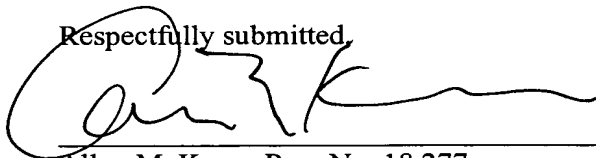
references suggest or teach applying a protective material to the inner surface of a form member as according to Applicant's invention wherein the interior volume remaining after the protective material has been applied to the interior surface of the form member is subsequently filled with a filler material having a different composition than that of the protective material.

There must be something in the prior art that suggested the combination other than the hindsight gained from knowledge that the inventor chose to combine these particular things in this particular way. *Id.* at 1438. Applicant contends that neither of the above-cited references make a suggestion for using a protective material on an interior surface of a form member as according to Applicant's invention and as such Applicant respectfully requests that these references be withdrawn as a basis for rejection under 35 USC 103.

From the foregoing amendments and remarks in response to the above-identified Office Action, Applicant now believes that the claims as amended are now in condition for allowance and such action toward these ends is respectfully requested.

Attached hereto is a marked-up version of the changes made to the title, specification claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'AM Krass', is written over a horizontal line.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE TITLE:**

The title has been amended as follows:

COMPOSITE COLUMN AND [OR] BEAM  
FRAMING MEMBERS FOR BUILDING CONSTRUCTION

**IN THE SPECIFICATION:**

The paragraph beginning on line 9 of page 1 has been amended as follows:

The present invention is directed to composite column [or] and beam framing members for use in building construction. More particularly, the present invention is directed to a composite column or beam and a method for its manufacture that has superior insulating and fire/heat resistance characteristics.

The paragraph beginning on line 14 of page 1 has been amended as follows:

It is well known that the steel beams and columns that are used as the structural framework of modern buildings are not fireproof. Indeed, when exposed to heat and fire, steel beams and columns will expand, warp and rapidly lose strength. To protect against this type of extreme structural damage as well as the ongoing effects of weather, modern building codes often require that a coating of protective material be applied to the exterior surface of a building's steel framework. These protective materials are typically classified as either fire-resistant materials (i.e. mineral wool, fiberglass or the like) or heat sink materials (e.g. gypsum board[,] or cement plasters[, sand, gravel or concrete]). However, additional types of thermal or weather insulation may also be thought of as protective materials. Either class of fire-

protective material can, for a reasonable period of time (e.g., one to three hours), be designed to delay the heat from a fire from affecting the steel framework.

The paragraph beginning on line 21 of page 3 has been amended as follows:

Prior to being secured together, reinforcing bars are positioned throughout the interior channel as required by the user. Spacers or risers may also be positioned along the surface of the interior channel in order to maintain the reinforcing bars a predetermined distance from the interior surface of the channel. Additionally, the interior channel of at least one of the shell members [is] may be coated with protective materials (i.e., insulation). The use of a protective material is most preferred when at least a portion of framing members of the present invention are exposed to the exterior of a building. Under such conditions, the use of a protective material on the internal surface(s) of the framing member (particularly those having exposed external surfaces) provides the framing member with an additional defense against condensation, corrosion, fire and heat.

The paragraph beginning on line 10 of page 4 has been amended as follows:

Preferably, the composite structural member is erected (in the case of a column) or positioned (in the case of a beam) at the work site and filled with [a filler material (such as] concrete[, sand, gravel or the like)] according to the needs or requirements of the user.

The paragraph beginning on line 20 of page 4 has been amended as follows:

In a second step, at least one [reinforcing member] spacing bar (e.g., a steel reinforcing rod) is [positioned within the interior channel of] secured along the interior surface of each shell.

A new paragraph has been added before line 22 of page 4.

The paragraph beginning line 22 of page 4 has been amended as follows:

In a [third] fourth step, the first and second shells are secured together at least partially along their respective substantially open sides so that the interior channels of the first and second shell members cooperate to define either a hollow column or open beam having an interior volume.

A new paragraph has been added after line 2 of page 5.

The paragraph beginning on line 3 of page 5 has been amended as follows:

In a [fourth] sixth step, the interior volume of the column or beam is filled with a filler material (e.g., concrete).

The paragraph beginning on line 5 of page 5 has been deleted.

The paragraph beginning on line 13 of page 7 has been amended as follows:

Still referring to Figures 1, 2 and 3, at least one reinforcing member 24 is secured within the interior channels 36 of each shell 16, 18. Preferably, the reinforcing member 24 is a steel reinforcing rod [such as an angle ("L's"), channel

("U's"),] or the like. The reinforcing member 24 is preferably welded onto spacing bars 27 that are welded to the base 30 of each shell 16, 18. Alternatively, the reinforcing members may be secured or positioned upon a spacer 40 that is secured to the base 30 and extends upwardly from the base 30 a predetermined distance.

The paragraph beginning on line 20 of page 7 has been amended as follows:

Following installation of the [at least one reinforcing member 24] spacing bars 27, a coating of protective material 26 is applied to the surface 37 of the interior channel 36 of at least one of the shells 16, 18. The use of a protective material is most preferred when at least a portion of framing members of the present invention are exposed to the exterior of a building. Under such conditions, the use of a protective material on the internal surface(s) of the framing member (particularly those having exposed external surfaces) provides the framing member with an additional defense against condensation, corrosion, fire and heat.

The paragraph beginning on line 6 of page 8 has been amended as follows:

Preferably, the protective material 26 is a known insulation material, such as weather insulation, a fire-resistant material (e.g., mineral wool or fiberglass), a heat sink material (e.g., gypsum board[,] or cement plasters[, sand, gravel or concrete]) or other type of thermal insulation material. Notably, coating the surface 37 of the interior channel 36 of at least one of the shells 16, 18 with the protective material 26 during the fabrication of the column 12 removes or limits the need to apply insulation to the column 12 in the field and provides the column 12 with superior insulative or fire/heat resistance characteristics.



The paragraph beginning on line 15 of page 8 has been amended as follows:

Still referring to Figures 1, 2 and 3, preferably, the shells 16, 18 are secured together along their respective flanges 38 by welding or similar process. Securing of the shells along the open sides of the interior channel 36 provides the column 12 with a generally open, or hollow, interior that defines an interior volume 39. Following erection of the column 12 at a construction site, at least one reinforcing member 24 may be disposed into the interior volume 39 formed by the shells 16, 18. Finally, the interior volume 39 is filled with a filler material 23 that provides increased structural characteristics to the column. Preferably, the filler material 23 is concrete. However, other types of filler materials 23 [such as sand, gravel or aggregate materials] may also be used according to the needs of the user.

The paragraph beginning on line 1 of page 9 has been amended as follows:

Referring now to Figures 1, 4 and 5, there is shown a beam 14 framing member constructed in accordance with the present invention. Preferably, the beam 14 includes a first 20 and a second shell 22 member. Each shell 20, 22 has a generally L-shaped appearance that is defined by a base 50 having a first flange 52 that extends upwardly from the base 50 and a sidewall 54 having a flange 56 that extends inwardly from the sidewall 54. The base 50 and sidewall 54 of each shell 20, 22 form an interior channel 59. Similar to the column 12 discussed above, at least one [reinforcing member 24] spacing bar 27 is secured to the interior surface 60 of the interior channel 59 of each shell 20, 22. Thereafter, a coating of protective material 26 (as discussed above) is applied to the interior surface 60 of at least one of the shells

20, 22. The shells 20, 22 of the beam 14 are preferably secured together by welding the flanges 56 of the sidewalls 54 of the shells 20, 22.

The paragraph beginning on line 14 of page 9 has been amended as follows:

Welding of the shells 20, 22 provides an elongated beam 14 framing member having a generally U-shaped appearance having an open interior defining an interior volume 62 that is accessible through an open side 64. Following erection of the beam 14 at a construction site, the interior volume 62 of the beam 14 [is] may be disposed with reinforcing members 24 and then filled with a filler material 23 (as discussed above) that provides increased structural characteristics to the beam 14.

The paragraph beginning on line 20 of page 9 has been amended as follows:

Referring now to Figures 6 and 7, there is shown an alternative embodiment of a beam 14' framing member constructed in accordance with the present invention. Preferably, the beam 14' includes a first shell 20' and a second shell 22' member. Each shell 20', 22' has a generally L-shaped appearance that is defined by a base 70, 71 having a first flange 72 that extends upwardly from the base 70 and a sidewall 74 having a flange 76 that extends inwardly from the sidewall [78] 74. The base 70 and sidewall 74 of each shell 20', 22' form an interior channel 77. The base 70 of the first shell 20' is preferably wider than the base 71 of the second shell 22' such that a floor or roof system 110 may be adapted to abut against the first shell [70] 20' while being supported by the beam 14'.

The paragraph beginning on line 8 of page 10 has been amended as follows:

At least one [reinforcing member 24] spacing bar 27 is secured to the surface 79 of the base 70 of each shell 20', 22'. Alternatively, spacers 40 are provided along the surface [78] 79 of at least one shell 20', 22' to support the span of the at least one reinforcing member 24 from one shell 20' to the other shell 22'. Following insertion of the [reinforcing member 24] spacing bars 27, a coating of protective material 26 (as discussed above) is applied to the interior surface of at least one of the shells 20', 22'. The shells 20', 22' of the beam 14' are then preferably secured by welding together the flanges 76 of the sidewalls 74 of the shells 20', 22'.

The paragraph beginning on line 16 of page 10 has been amended as follows:

Welding of the shells 20', 22' provides an elongated beam 14' framing member having a generally U-shaped appearance having an open interior defining an interior volume 82 that is accessible through an open side 84. Following erection of the beam 14' at a construction site, the interior volume 82 of the beam 14' [is] may be disposed with reinforcing members 24 and then filled with a filler material 23 (as discussed above) that provides increased structural characteristics to the beam 14'.

The paragraph beginning on line 7 of page 11 has been amended as follows:

In a second step 94, at least one [reinforcing member] spacing bar 27 (e.g., a steel reinforcing rod [such as an angle ("L's"), channel ("U's") or the like]) is positioned [within the interior channel of each shell] and secured to the interior surface of at least one of the shell members.

The paragraph beginning on line 10 of page 11 has been amended as follows:

In a third step 96, a protective material is applied into the interior channel of each shell. As discussed above, the protective material 26 is preferably a known insulation material, such as weather insulation material, a fire-resistant material (e.g., mineral wool or fiberglass), a heat sink material (e.g., gypsum board[,] or cement plasters[, sand, gravel or concrete]) or other type of thermal insulation material.

The paragraph beginning on line 20 of page 11 has been amended as follows:

In a fifth step 100, the interior volume of the column or beam is [filled with a filler material (e.g., concrete)] disposed with at least one reinforcing member 24.

A new paragraph has been added before line 22 of page 11.

**IN THE CLAIMS:**

Claim 1 has been amended as follows:

- 1           1.       (Amended) A structural framing member comprising:
  - 2               a first and a second shell member each being elongated so as to have a length
  - 3               dimension which is greater than a width dimension, each shell having an interior
  - 4               surface and including one substantially open side extending along said length
  - 5               dimension, each shell being configured so that said first shell member is securable to
  - 6               said second shell member so that said substantially open sides of said first and second
  - 7               shell members are at least partially contiguous and said first and second shell
  - 8               members cooperate to define an interior volume;
  - 9               a protective material disposed on the interior surface of at least one of said
  - 10              shells;

11           at least one reinforcing member positioned within said interior volume defined  
12   by said first and second shell member; and  
13           a filler material disposed within said interior volume to secure said reinforcing  
14   member within said interior volume and wherein said filler material is of a different  
15   composition than said protective material.

Claim 2 has been cancelled.

Claim 17 has been amended as follows:

1           17. (Amended) A method for manufacturing a structural frame  
2   comprising:  
3           providing a first and a second shell member each being elongated so as to have  
4   a length dimension which is greater than a width dimension, each shell member  
5   including one substantially open side extending along said length dimension and  
6   defining an interior channel;  
7           applying a protective material to said interior surface of said at least one shell  
8   member;  
9           [positioning at least one reinforcing member within each of said interior  
10   channels of said first and second shell member;]  
11           securing said first shell member to said second shell member at least partially  
12   along said substantially open side so that the interior channels of the first and second  
13   shell members cooperate to define an interior volume;  
14           positioning at least one reinforcing member within each of said interior  
15   channels of said first and second shell member; and

16           filling said interior volume defined by said first and second shell member with  
17   a filler material having a different composition from said protective material so that  
18   said reinforcing members are secured within said interior volume.

Claim 18 has been cancelled.

Claim 19 has been amended as follows:

19.   (Amended) A structural framing member comprising:

a first and a second shell member each being elongated so as to have a length dimension which is greater than a width dimension, each shell having an interior surface and including one substantially open side extending along said length dimension, each shell being configured so that said first shell member is securable to said second shell member so that said substantially open sides of said first and second shell members are at least partially contiguous and said first and second shell members cooperate to define an interior volume;

at least one [reinforcing member] spacing bar affixed to the interior surface of said first and second shell member;

a protective material applied on [said] the interior surface of each of said shell[s] members; [and]

at least one reinforcing member disposed within the interior volume defined by said shell members; and

a filler material disposed within [said] the interior volume to secure said at least one reinforcing member within [said] the interior volume wherein said filler material is a different composition from said protective material.